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Drip Irrigation Management (Field 2)

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Objective: The objective is to evaluate production inputs and resulting lint yields of two cotton management scenarios – high input for maximum yield versus normal input for sustainable yield.

Methodology: Cotton was planted in a field where a ten-zone SDI system was installed. Irrigations were applied in alternate furrows of 30-inch rows with each zone 1300 ft by 16 rows wide and independently controlled and metered. Two levels of drip irrigated cotton management were compared. The first was a *High-Input*, high-yield management scenario with the production goal of 3.5 bales per acre and no restriction on input levels. The second management scenario will provide more *Normal* levels of inputs with annual yield goals of 2.5 bales per acre

Results: The 2001 cotton crop was planted late due to wet weather and other priorities. Irrigations were applied daily with *Normal* treatments receiving 60% of the base irrigation amount (estimated evaporative demand) and *High Input* treatments watered at 110% of base irrigation. In season nitrogen fertilizer was applied as a ratio of irrigation quantity. As expected, following a very dry growing season, yields were significantly higher and cotton fibers significantly longer from *High Input* treatments compared to the *Normal* treatments. Table 1 summarizes cotton lint yield and fiber quality data.

Table 1. Irrigation quantity, lint yield, and fiber quality data resulting from two levels of management using SDI irrigation at TAES, Halfway, 2001.

Treatment	Seasonal Irr. (in.)	Yield (lb./ac.)	Mic	Length (in.)	Strength (gr/tx)
Normal	8.51	687	4.5	1.005	28.55
High Input	13.83	1014	4.1	1.045	28.28

Expectations: Comparison of the treatment inputs and yields will be made to help growers determine optimum water management and return on investment using SDI.



Figure 1. Field of cotton irrigated by SDI, managed at